

CLAIMS

What is claimed is:

1 *Sub 1* 1. An angle attachment for a power tool, comprising:
2 (a) an angle attachment housing;
3 (b) an attachment shaft mounted in the angle attachment housing
4 and having an attachment end extending therefrom;
5 (c) a first attachment shaft bearing mounted in the angle
6 attachment housing and positioned therein to support the attachment shaft for
7 rotational movement thereof;
8 (d) an attachment shaft gear attached to the attachment shaft; and
9 (e) an alignment bearing mounted in the angle attachment housing
10 and adapted to receive a first shaft having a first shaft gear mounted thereon to
11 support the first shaft for rotational movement thereof and positioned in the angle
12 attachment housing such that when the first shaft is positioned in the alignment
13 bearing the attachment shaft is at an angle to the first shaft and the attachment shaft
14 gear is engaged with the first shaft gear.

1 2. The angle attachment of Claim 1 wherein the angle attachment
2 housing includes an open first end and wherein the alignment bearing is mounted in
3 the angle attachment housing in alignment with an axis of the open first end of the
4 angle attachment housing.

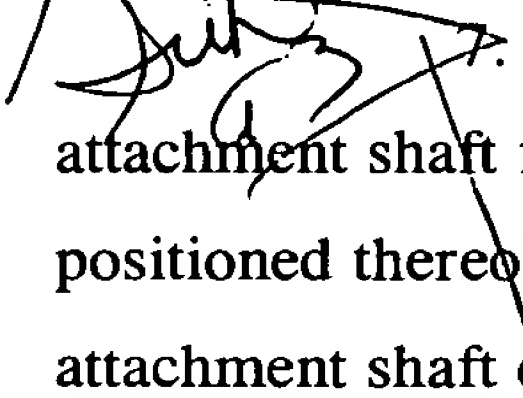
1 *Sub 2* 3. The angle attachment of Claim 2 wherein the open first end of
2 the angle attachment housing is sized and shaped to fit around a portion of a motor
3 housing of a power tool and further including means for securing the open first end
4 of the angle attachment housing to the motor housing of the power tool.

1 4. The angle attachment of Claim 3 wherein the means for
2 securing the open first end of the angle attachment housing to the motor housing of
3 the power tool includes at least one slot formed in the angle attachment housing and
4 extending from the open first end thereof and a fastener mounted on the angle
5 attachment housing and extending across the slot such that when the fastener is

6 tightened the slot is pulled closed to thereby reduce the circumference of the open
7 first end of the angle attachment housing to secure the open first end of the angle
8 attachment housing to the portion of the motor housing.

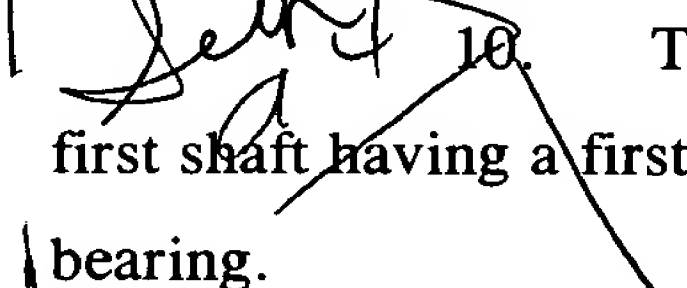
1 5. The angle attachment of Claim 1 wherein the attachment end
2 of the attachment shaft is adapted to have tool attachments attached thereto.

1 6. The angle attachment of Claim 5 wherein the attachment end
2 of the attachment shaft is threaded.

1  7. The angle attachment of Claim 6 comprising additionally an
2 attachment shaft flange mounted on the attachment end of the attachment shaft and
3 positioned thereon such that a threaded portion of the attachment end of the
4 attachment shaft extends beyond the attachment shaft flange.

1 8. The angle attachment of Claim 1 wherein the first attachment
2 shaft bearing is positioned in the angle attachment housing on a first side of the
3 attachment shaft gear mounted on the attachment shaft and comprising additionally a
4 second attachment shaft bearing mounted in the angle attachment housing and
5 positioned therein on a second side of the attachment shaft gear mounted on the
6 attachment shaft to support the attachment shaft for rotational movement thereof in
7 the angle attachment housing.

1 9. The angle attachment of Claim 1 wherein the alignment
2 bearing is positioned in the angle attachment housing such that when the first shaft
3 is positioned in the alignment bearing the attachment shaft is at a right angle to the
4 first shaft.

1  10. The angle attachment of Claim 1 comprising additionally a
2 first shaft having a first shaft gear mounted thereon positioned in the alignment
3 bearing.

1 11. The angle attachment of Claim 10 wherein the first shaft
2 includes a proximal end and a distal end, wherein the first shaft gear is mounted on

3 the first shaft between the proximal and distal ends thereof and positioned thereon
4 such that when the distal end of the first shaft is positioned in the alignment bearing
5 the first shaft gear engages the attachment shaft gear, and wherein the distal end of
6 the first shaft is positioned in the alignment bearing.

1 12. The angle attachment of Claim 11 wherein the distal end of
2 the first shaft is smaller in circumference than the proximal end thereof.

1 ~~obvious~~ 13. The angle attachment of Claim 1 comprising additionally
2 attachment shaft lock means for preventing rotation of the attachment shaft.

1 14. An angle attachment for a power tool having a motor housing,
2 a motor located within the motor housing, a motor shaft driven by the motor and
3 having a motor shaft end extending from the motor housing, and a mechanical
4 structure attached to the motor shaft end for securing attachments to the motor
5 shaft, comprising:

6 (a) an angle attachment housing having an open first end thereof
7 attached to the motor housing around a location where the motor shaft extends from
8 the motor housing;

9 (b) an attachment shaft mounted in the angle attachment housing
10 and having an attachment end extending from a second end thereof;

11 (c) a first attachment shaft bearing mounted in the angle
12 attachment housing and positioned therein to support the attachment shaft for
13 rotational movement thereof;

14 (d) an attachment shaft gear attached to the attachment shaft;

15 (e) an alignment bearing mounted in the angle attachment
16 housing;

17 (f) a first shaft attached to the motor shaft via the mechanical
18 structure and removably positioned in the alignment bearing at an angle to the
19 attachment shaft to be supported by the alignment bearing for rotational movement
20 thereof; and

21 (g) a first shaft gear mounted on the first shaft and engaged with
22 the attachment shaft gear.

1 15. The angle attachment of Claim 14 wherein the alignment
2 bearing is mounted in the angle attachment housing in alignment with an axis of the
3 open first end of the angle attachment housing.

1 16. The angle attachment of Claim 14 further comprising means
2 for securing the open first end of the angle attachment housing to the motor housing
3 of the power tool.

1 17. The angle attachment of Claim 16 wherein the means for
2 securing the open first end of the angle attachment housing to the motor housing of
3 the power tool includes at least one slot formed in the angle attachment housing and
4 extending from the open first end thereof and a fastener mounted on the angle
5 attachment housing and extending across the slot such that when the fastener is
6 tightened the slot is pulled closed to thereby reduce the circumference of the open
7 first end of the angle attachment housing to secure the open first end of the angle
8 attachment housing to the motor housing.

1 18. The angle attachment of Claim 14 wherein the attachment end
2 of the attachment shaft is adapted to have tool attachments attached thereto.

1 19. The angle attachment of Claim 18 wherein the attachment end
2 of the attachment shaft is threaded.

1 20. The angle attachment of Claim 19 comprising additionally an
2 attachment shaft flange mounted on the attachment end of the attachment shaft and
3 positioned thereon such that a threaded portion of the attachment end of the
4 attachment shaft extends beyond the attachment shaft flange.

1 21. The angle attachment of Claim 14 wherein the first attachment
2 shaft bearing is positioned in the angle attachment housing on a first side of the
3 attachment shaft gear mounted on the attachment shaft and comprising additionally a

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4 second attachment shaft bearing mounted in the angle attachment housing and
5 positioned therein on a second side of the attachment shaft gear mounted on the
6 attachment shaft to support the attachment shaft for rotational movement thereof in
7 the angle attachment housing.

1 22. The angle attachment of Claim 14 wherein the first shaft is
2 positioned in the alignment bearing at a right angle to the attachment shaft.

1 23. The angle attachment of Claim 14 wherein the first shaft
2 includes a proximal end and a distal end, wherein the first shaft gear is mounted on
3 the first shaft between the proximal and distal ends thereof and positioned thereon
4 such that when the distal end of the first shaft is positioned in the alignment bearing
5 the first shaft gear engages the attachment shaft gear, and wherein the distal end of
6 the first shaft is positioned in the alignment bearing.

1 24. The angle attachment of Claim 23 wherein the distal end of
2 the first shaft is smaller in circumference than the proximal end thereof.

1 25. The angle attachment of Claim 1 comprising additionally
2 attachment shaft lock means for preventing rotation of the attachment shaft.

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